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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,687	07/03/2001	Henry J. Pepin	1001.1458101	1767

28075 7590 05/05/2004

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EXAMINER	
BUI, VY Q	

ART UNIT	PAPER NUMBER
3731	19

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/898,687	PEPIN, HENRY J.	
	Examiner	Art Unit	
	Vy Q. Bui	3731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-18 and 22-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-18 and 22-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☑ Other: 4 pages attached

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-2, 4-15, 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over STEEN et al. (6,213,995).

STEEN (Fig. 1-2) discloses a vascular catheter comprising inner layer 30, outer layer 32 and reinforced layer including at least two first wires 20 of stainless steel (col. 5, lines 20-23) for increased tensile strength and toughness (col. 5, lines 30-33) and two highly radiopaque metal wires 44 of gold or silver or platinum (col. 5, lines 14-18) as recited in the claims.

STEEN discloses substantially all limitations in the claims, except for highly radiopaque wire 44 of tungsten. However, it is well known in the art that platinum and tungsten are materials with high tensile strength and tungsten has higher electrical conductivity (tungsten's electrical conductivity of 176.991l/mohm-cm is about 1.92 times platinum's electrical conductivity of 94.34 l/mohm-cm, see attached). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute wire 44 of platinum by wire 44 of tungsten as this substitution would provide STEEN catheter better electrical conductivity over platinum.

2. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over STEEN et al. (6,213,995) in view of SATER et al. (6,068,622).

As to claims 16-18, STEEN discloses substantially all limitations in the claims, except for sections of the catheter of distally decreasing stiffness and a soft distal tip. However, SATER (col. 4, paragraph 4 and col. 6, lines 58-66) discloses SATER catheter having sections of distally decreasing stiffness and soft tip 40 without reinforcing layer for easy and safe navigation of the catheter in a body lumen. In view of SATER, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide STEEN catheter the features taught by SATER so as to have more flexibility toward the distal end of the STEEN catheter for safe and easy deployment of the catheter.

Response to Amendment

The amendment filed on 2/03/2004 under 37 CFR 1.131 has been considered but is ineffective to overcome the STEEN-'995 reference as indicated in the above rejection. Notice that STEEN-'995 use platinum for wire 44, which platinum is less conductive than tungsten. Therefore, one of ordinary skill in the art would look for tungsten as a better substitute of platinum to better conduct electrical transmission. Therefor, it is reasonable to one of ordinary skill in the art to substitute tungsten for platinum in STEEN-'995 catheter as suggested in the above rejection. The motivation as suggested in the previous "Office Action" was correct as

well, because it is always desirable for a medical catheter to be radiopaque so as to monitor a deployment of the device.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vy Q. Bui whose telephone number is 703-306-3420. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J Milano can be reached on 703-308-2496. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vy Q. Bui
Primary Examiner
Art Unit 3731

TUNGSTEN

[General | States | Energies | Oxidation & Electrons]
[Appearance & Characteristics | Reactions | Other Forms]
[Radius | Conductivity | Abundance | History]

General

Name	Tungsten	Symbol	W
Atomic number	74	Atomic weight	183.85
Density @ 293 K	19.3 g/cm3	Atomic volume	9.53 cm3/mol
Group	Trans. Met.	Discovered	1783

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States

State (s, l, g)	s		
Melting point	3683.2 K	Boiling point	5773 K
Heat of fusion	35.40 kJ/mol	Heat of vaporization	824.0 kJ/mol

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Energies

1st ionization energy	770 kJ/mole	Electronegativity	2.36
2nd ionization energy	kJ/mole	Electron affinity	78.6 kJ/mole
3rd ionization energy	kJ/mole	Specific heat	0.13 J/gK
Heat atomization	849 kJ/mole atoms		

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Oxidation & Electrons

Shells	2,8,18,32,12,2	Electron configuration	[Xe] 4f14 5d4 6s2
Minimum oxidation number	-2	Maximum oxidation number	6
Minimum common oxidation number	0	Maximum common oxidation number	6

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Appearance & Characteristics

Structure	bcc: body-centered cubic	**Color**	bluish-gray
Uses	WC drill bits, bulb wire	**Toxicity**	
Hardness	mohs	**Characteristics**	highest melting metal

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Reactions

Reaction with air	none, w/ht =>WO3	**Reaction with 6M HCl**	none
Reaction with 6M HCl	none	**Reaction with 15M HNO3**	
Reaction with 6M NaOH			

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Other Forms

Number of isotopes	5	**Hydride(s)**	
Oxide(s)	WO2 WO3	**Chloride(s)**	WClx [x=2-6]

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Radius

Ionic radius (2- ion)	pm	**Ionic radius (1- ion)**	pm
Atomic radius	139 pm	**Ionic radius (1+ ion)**	pm
Ionic radius (2+ ion)	pm	**Ionic radius (3+ ion)**	pm

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Conductivity

Thermal conductivity	173 J/m-sec-deg	**Electrical conductivity**	176.991 1/mohm-cm
Polarizability	11.1 A^3		

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Abundance

Source	Scheelite,wolframite(oxide)	**Rel. abund. solar system**	-0.876 log

PLATINUM

[General | States | Energies | Oxidation & Electrons]
[Appearance & Characteristics | Reactions | Other Forms]
[Radius | Conductivity | Abundance | History]

General

Name	Platinum	Symbol	Pt
Atomic number	78	Atomic weight	195.09
Density @ 293 K	21.45 g/cm3	Atomic volume	9.10 cm3/mol
Group	Trans. Met.	Discovered	1748

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States

State (s, l, g)	s		
Melting point	2045.2 K	Boiling point	4443 K
Heat of fusion	19.60 kJ/mol	Heat of vaporization	510.0 kJ/mol

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Energies

1st ionization energy	870 kJ/mole	Electronegativity	2.28
2nd ionization energy	1791 kJ/mole	Electron affinity	205.3 kJ/mole
3rd ionization energy	kJ/mole	Specific heat	0.13 J/gK
Heat atomization	565 kJ/mole atoms		

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Oxidation & Electrons

Shells	2,8,18,32,17,1	Electron configuration	[Xe] 4f14 5d9 6s1
Minimum oxidation number	0	Maximum oxidation number	6
Minimum common oxidation number	0	Maximum common oxidation number	4

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Appearance & Characteristics

Structure	fcc: face-centered cubic	Color	silvery-white
Uses	jewelry, catalysts	Toxicity	
Hardness	4.3 mohs	Characteristics	Inert, ductile

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Reactions

Reaction with air	none	Reaction with 6M HCl	none
Reaction with 6M HCl	none	Reaction with 15M HNO3	none
Reaction with 6M NaOH	none		

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Other Forms

Number of isotopes	6	Hydride(s)	none
Oxide(s)	PtO2	Chloride(s)	PtCl2 PtCl4

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Radius

Ionic radius (2- ion)	pm	Ionic radius (1- ion)	pm
Atomic radius	139 pm	Ionic radius (1+ ion)	pm
Ionic radius (2+ ion)	94 pm	Ionic radius (3+ ion)	pm

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Conductivity

Thermal conductivity	71.6 J/m-sec-deg	Electrical conductivity	94.34 1/mohm-cm
Polarizability	6.5 A^3		

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Abundance

Source	nickel ores (sulfides)	Rel. abund. solar system	0.127 log